

NBC TOUR REVEALS BROADCASTING MYSTERIES



RCA's NBC takes you back stage—Enormous has been the growth of public interest in broadcasting, its personalities, its methods. So many are the visitors to NBC headquarters in New York that Radio City bids fair to replace hallowed Mount Vernon as America's No. 1 attraction. Escorted by smartly-uniformed guides, more than 560,000 visitors took the NBC Studio Tour in 1936, and the number grows yearly.

When you take this fascinating tour, you learn how 100,000 miles of wire, 3 million electrical connections, intricate—almost human—devices are woven together to create the smooth-running nerve center of two great radio networks. You will understand, too, through this spectacular exhibit of scientific marvels, the vast scope of NBC's service to the progress of the nation.

RCA, originally concerned with radio telegraphy, early foresaw the far-reaching importance of radio as means for providing entertainment and information, and selling radio instruments of the RCA Manufacturing Company. From WJZ and WEAJ, first RCA ventures in high-powered transmitters, grew NBC and two great networks of 137 stations. Listeners from Portland, Me., to Honolulu hear many times daily, "This is the National Broadcasting Company."

Today, the products and services of the Radio Corporation of America have made the entire world a close-knit country... and the country, a community.



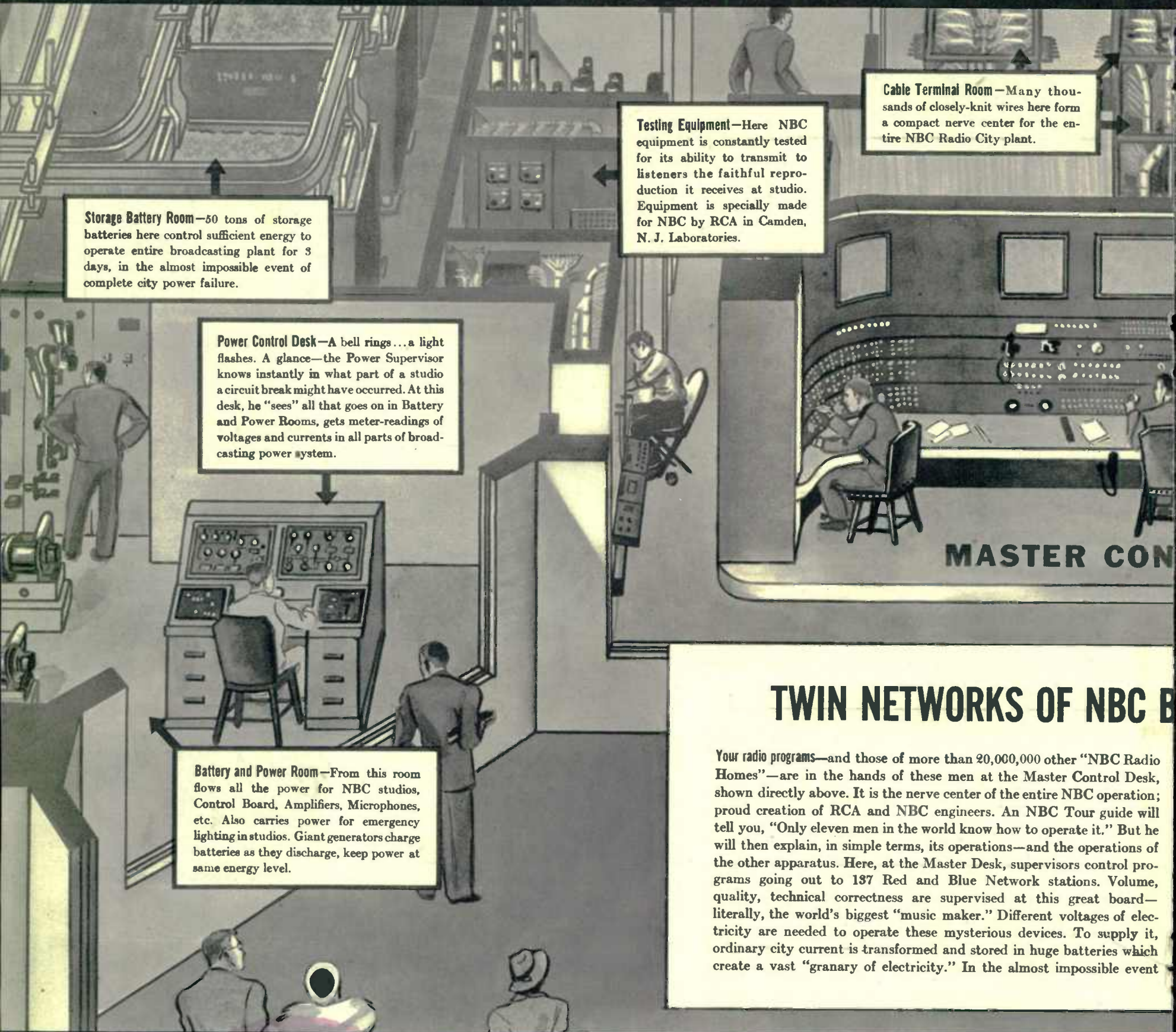
"Frying eggs"—Hear that crisp burbling? It's crinkling cellophane. Visitors who take NBC studio tour love radio Sound Effects, explained by a guide. Interest in radio personalities extends even to NBC's smartly triggered-out guides, many of whom receive fan mail from persons who have seen radio marvels under their guidance.



Hit-Show in the Making—Playing to the vast NBC audience in more than 20,000,000 homes demands perfection—nothing is left to chance. Rehearsals for an hour's actual showing sometimes run to 44 or more hours before Director is satisfied. Radio's immense opportu-

nities bring 56,000 hopefuls a year to NBC's 37 studios in 29 cities for auditions. Not all can be stars—but some will be in 1940. For that's how many of 1937's big names got their start—doing "bits" in an NBC show. Watching rehearsals is a feature of NBC Studio Tour.

THE GREATEST SHOW ON



Storage Battery Room—50 tons of storage batteries here control sufficient energy to operate entire broadcasting plant for 3 days, in the almost impossible event of complete city power failure.

Power Control Desk—A bell rings... a light flashes. A glance—the Power Supervisor knows instantly in what part of a studio a circuit break might have occurred. At this desk, he “sees” all that goes on in Battery and Power Rooms, gets meter-readings of voltages and currents in all parts of broadcasting power system.

Testing Equipment—Here NBC equipment is constantly tested for its ability to transmit to listeners the faithful reproduction it receives at studio. Equipment is specially made for NBC by RCA in Camden, N. J. Laboratories.

Cable Terminal Room—Many thousands of closely-knit wires here form a compact nerve center for the entire NBC Radio City plant.

Battery and Power Room—From this room flows all the power for NBC studios, Control Board, Amplifiers, Microphones, etc. Also carries power for emergency lighting in studios. Giant generators charge batteries as they discharge, keep power at same energy level.

MASTER CONTROL

TWIN NETWORKS OF NBC B

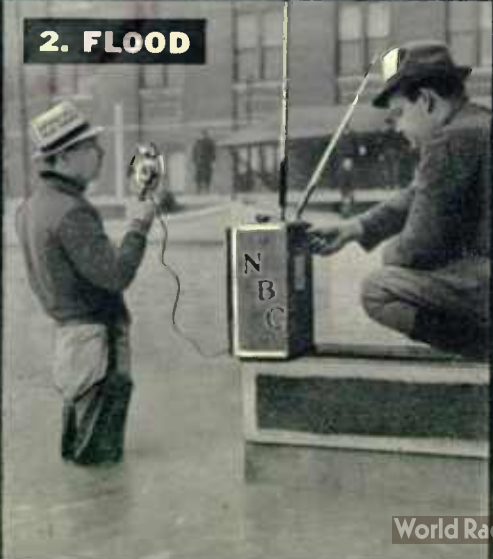
Your radio programs—and those of more than 20,000,000 other “NBC Radio Homes”—are in the hands of these men at the Master Control Desk, shown directly above. It is the nerve center of the entire NBC operation; proud creation of RCA and NBC engineers. An NBC Tour guide will tell you, “Only eleven men in the world know how to operate it.” But he will then explain, in simple terms, its operations—and the operations of the other apparatus. Here, at the Master Desk, supervisors control programs going out to 137 Red and Blue Network stations. Volume, quality, technical correctness are supervised at this great board—literally, the world’s biggest “music maker.” Different voltages of electricity are needed to operate these mysterious devices. To supply it, ordinary city current is transformed and stored in huge batteries which create a vast “granary of electricity.” In the almost impossible event

ON THE NBC NEWSFRONT.

1. TRAGEDY



2. FLOOD

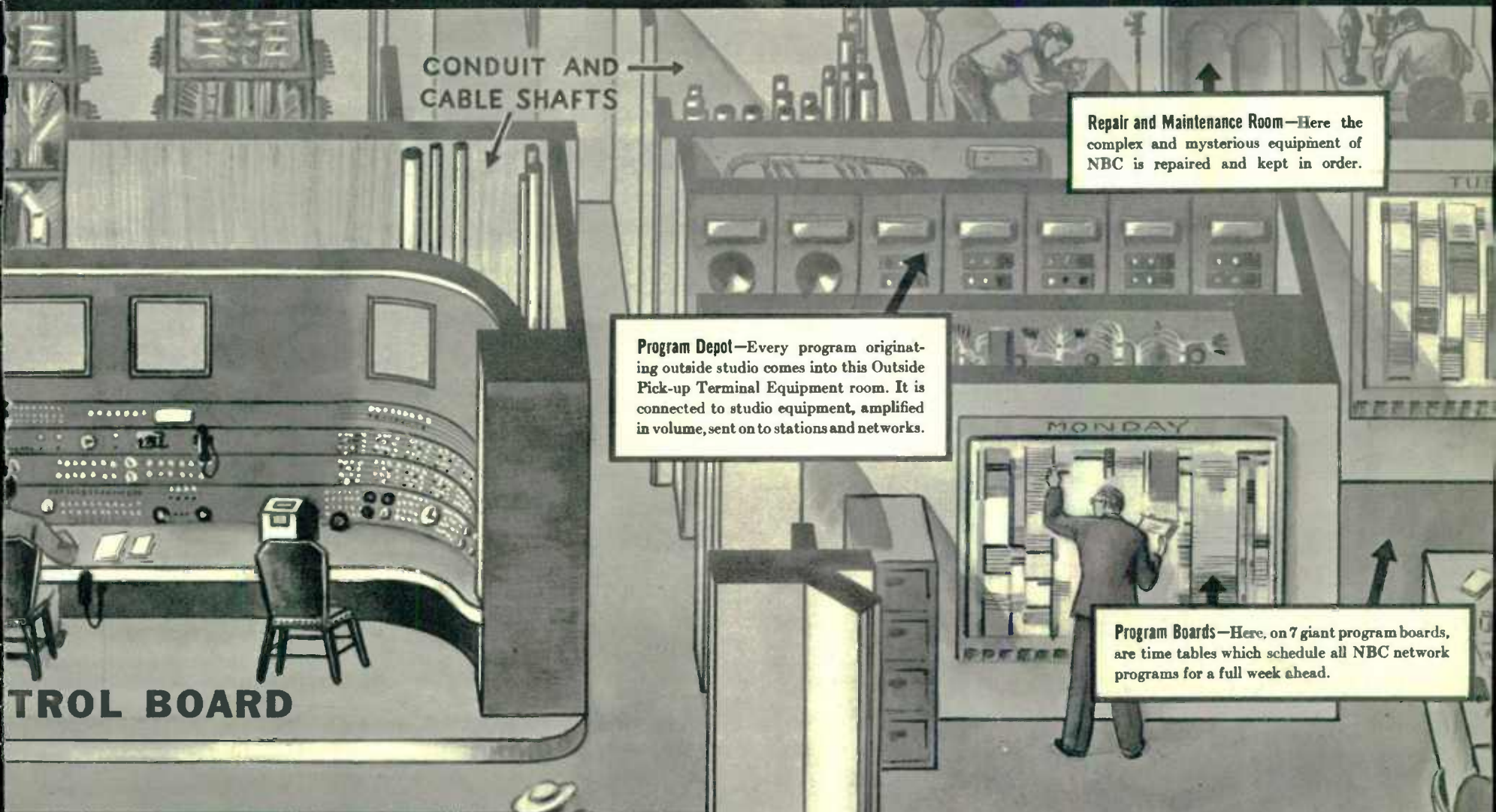


3. ECLIPSE



- 1. FLAMING DEATH**—World’s greatest air-ship crashes, a blazing furnace, at journey’s end. Few minutes later, NBC flashed tragic news, with eyewitness stories, preserved them for posterity on RCA Victor record. Radio outspeeds all means of spreading news.
- 2. FIELD OPERATIONS**—When Ohio floods periled thousands NBC sent a staff of engineers to bring you vital details of disaster. Many radio amateurs also aided maintaining communications in stricken areas.
- 3. “BIGGEST BLACKOUT”** in 1200 years saw moon’s shadow travel 8,000 miles over Pacific Ocean in total eclipse of sun lasting 7 min., 4 sec. NBC sent announcer Hicks with official U. S. Navy—National Geographic Society Expedition to broadcast it first-hand using RCA’s marine and transoceanic system.

EARTH GOES ON THE AIR



Repair and Maintenance Room—Here the complex and mysterious equipment of NBC is repaired and kept in order.

Program Depot—Every program originating outside studio comes into this Outside Pick-up Terminal Equipment room. It is connected to studio equipment, amplified in volume, sent on to stations and networks.

Program Boards—Here, on 7 giant program boards, are time tables which schedule all NBC network programs for a full week ahead.

CONTROL BOARD

BROADCAST 35 HOURS DAILY

that New York City's entire power system should fail, NBC could operate for three days on this reserve. Current from these emergency batteries is fed to proper parts of broadcasting power plant through an elaborate power distribution system. Practically all the highly technical equipment in these rooms is designed by NBC and RCA engineers and made in the great RCA Laboratories at Camden, N. J.

Further control of intricate broadcast operations is provided in traffic and teletype rooms at right. In **TRAFFIC** room: huge boards show time tables of all network programs, and local programs on WJAF and WJZ. Watched by hawk-eyed specialists, these boards insure split-second timing, a characteristic of NBC broadcasting. Through **TELETYPE**: instant direct communication by automatic typewriters is maintained for all NBC owned and affiliated stations, and to all outside telegraph systems.



Winged Words—NBC's Teletype Room speeds NBC's vast communication requirements through direct inter-station connections. Four other teletypes connect with RCA Communications and other outside telegraph systems. All messages are here received, dispatched.

..YOU LISTEN AS IT HAPPENS

4. STILL THE CHAMP—Recent heavy-weight title bout, Louis vs. Farr, went out over NBC's Red and Blue Networks—*exclusively*. 1936 set all-time high for outstanding NBC sporting event broadcasts . . . 350 hours . . . a 34% increase over year before.

5. AIR BUBBLE ALOFT—Specially built RCA Victor short wave equipment enabled NBC listeners to hear talks between fliers and ground crew on stratosphere flight. Transmitter smashed in gondola impact with earth. But an RCA tube was found intact!

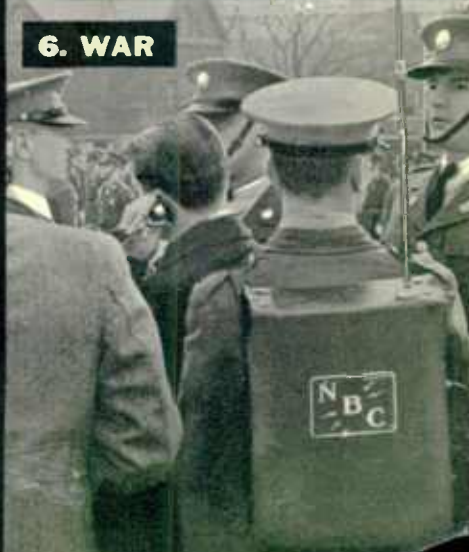
6. NBC IN KHAKI—Mere manoeuvres, or against a backdrop of bursting shells, sees NBC in national service of our government. Packet set transmitters are at home on all fronts . . . move with troops . . . lift words from History's pages before ink is dry.



4. FIGHT



5. STRATOSPHERE



6. WAR

HOW YOU HEAR A RADIO PROGRAM FROM EUROPE



Of growing interest and importance are radio's international hook-ups, in which companies and services of the Radio Corporation of America play the leads. In the course of a year, scores of such hook-ups are featured on RCA's weekly Magic Key program. During 1936, NBC handled 698 foreign broadcasts. Symphonies . . . operas . . . special events—from 51 countries. Regular NBC program service to Latin America

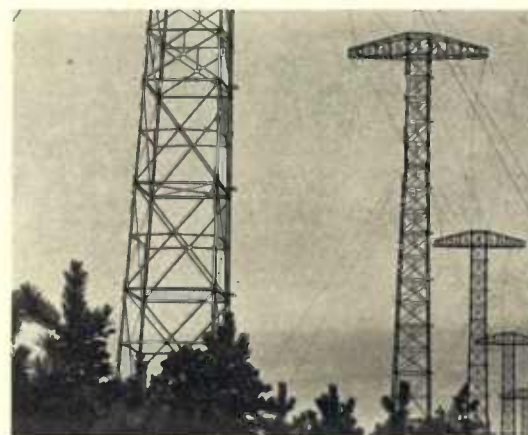
is now a fact . . . at least two daily programs are exchanged with leading European stations. Here are steps by which a foreign program—the great Salzburg Festival, for instance—is brought to more than 20,000,000 American radio homes through NBC's cooperation with the great communication organizations of Europe. Radio has made the whole world a neighborhood.



SALZBURG—High up in the Austrian Alps, Toscanini is conducting in Salzburg's famed Festspielhaus. Music lovers, the world over, are listening. NBC sponsors Conductor Toscanini in many special concert broadcasts, and only NBC brings the Salzburg Festival to America.



GENEVA—Program goes direct by wire from Salzburg to International Transmitter like this at "Radio Nations," Swiss Government transmitting station located at Geneva. Here it is put on what engineers call "short wave" to RCA Communications receiver in U. S.



RIVERHEAD—Program is received on these great antenna towers at RCA's Station at Riverhead, L.I. This important link in chain covers 1½ square miles. From its transmitting station, at nearby Rocky Point, RCA sends Radiograms, 200 words per minute, all over world.



RADIO CITY—From Riverhead, program is relayed by wire to RCA Communications, 66 Broad St., N.Y.C. It is amplified there, and despatched over another wire to the NBC Master Control Board at RCA's Radio City, explained in detail on two preceding pages.



BOUND BROOK—From Radio City, operators send program out by wire to broadcasting transmitters of NBC's 137 stations on Red and Blue Networks. Typical is WJZ, at Bound Brook, N. J., showing 640-ft. antenna designed by RCA Victor engineers at Camden, N. J.



YOUR HOME—Arrival! Signor Toscanini's genius is available at the turn of a dial to the American radio audience. RCA Victor sets are found in millions of households. Latest examples are 1938 Electric Tuning Models—"Push a Button and There's Your Station."